IN THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF PENNSYLVANIA

MIDWEST ATHLETICS AND SPORTS ALLIANCE LLC, *Plaintiff,* v. **RICOH USA, INC.,** *Defendant.*	Case No. 2:19-cv-00514-JDW

MEMORANDUM

Plaintiff Midwest Athletics and Sports Alliance LLC ("MASA") sued Defendant Ricoh USA, Inc. alleging that Ricoh infringed 19 of MASA's Patents. Presently before the Court are the Parties' disputes over the meaning of 18 disputed claim terms stemming from the following 8 patents: (1) U.S. Patent No. 6,203,005 ('3005 Patent); (2) U.S. Patent No. 6,411,314 ('314 Patent); (3) U.S. Patent No. 6,509,974 ('974 Patent); (4) U.S. Patent No. 6,554,269 ('269 Patent); (5) U.S. Patent No. 6,718,285 ('285 Patent); (7) U.S. Patent No. 7,502,582 ('582 Patent); (7) U.S. Patent No. 7,720,425 ('425 Patent); and (8) U.S. Patent No. 8,019,255 ('255 Patent).

I. LEGAL STANDARDS

A. General Principles of Claim Construction

"It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWS Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (quote omitted). Claim construction is a matter of law. *See Teva Pharm. USA v. Sandoz, Inc.*, 135 S. Ct. 831, 837 (2015). There is no "magic formula or catechism" for construing a patent claim, nor is a court barred from considering "any particular sources or required to analyze

sources in any specific sequence." *Phillips*, 415 F.3d at 1323. Instead, a court is free to attach the appropriate weight to appropriate sources "in light of the statutes and policies that inform patent law." *Id.*

A court generally gives the words of a claim their ordinary and customary meaning, which is the "meaning that the term would have to a person of ordinary skill in the art at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1312-13 (quote omitted). Usually, a court first considers the claim language; then the remaining intrinsic evidence; and finally, the extrinsic evidence in limited circumstances. *See, e.g., Interactive Gift Exp., Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001). While "the claims themselves provide substantial guidance as to the meaning of particular claim terms," a court also must consider the context of the surrounding words. *Id.* at 1314. In addition, the patent specification is "always highly relevant to the claim construction analysis. Usually, it is dispositive; "it is the single best guide to the meaning of a disputed term." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). But, while a court must construe claims to be consistent with the specification, the court must "avoid the danger of reading limitations from the specification into the claim," *Phillips,* 415 F.3d at 1323. This is a "fine" distinction. *Comark Communications, Inc. v. Harris Corp.,* 156 F.3d 1182, 1186–87 (Fed.Cir.1998). In addition, "[e]ven when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction. *Hill-Rom Svcs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014) (quote omitted).

A court may refer to extrinsic evidence only if the disputed term's ordinary and accustomed meaning cannot be discerned from the intrinsic evidence. *See Vitronics,* 90 F.3d at 1584. Although a court may not use extrinsic evidence to vary or contradict the claim language, extrinsic materials "may be helpful to explain scientific principles, the meaning of technical terms, and terms of art that appear in the patent and prosecution history. . .." *Markman v. Westview Instruments, Inc.,* 52 F.3d 967, 980 (Fed. Cir. 1995). Extrinsic evidence is used "to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art." *Phillips,* 415 F.3d at 1318. The Federal Circuit has cautioned against relying upon expert reports and testimony that is generated for the purpose of litigation because of the likelihood of bias. *Id.*; *see also Daubert v. Merrell Dow Pharms., Inc.,* 509 U.S. 579, 595, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993) ("Expert evidence can be both powerful and quite misleading because of the difficulty in evaluating it.")

Ultimately, the "construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be . . . the correct construction." *Renishaw PLC v. Marposs Societa' per Anzioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that a "claim interpretation that would exclude the inventor's device is rarely the correct interpretation." *Osram GmbH v. Int'l Trade Comm'n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (quote omitted).

B. Construction of Means-Plus-Function Limitations

When construing claim terms, a court must consider whether they are "mean-plus-function" limitations. Means-plus-function claim elements are interpreted according to 35 U.S.C. § 112(f):

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in

> support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof

35 U.S.C. § 112(f). For patents that predate the America Invents Act, the same standard applies under former 35 U.S.C. § 112, ¶ 6.

To determine whether Section 112, ¶ 6 governs a claim, the "essential inquiry" is "whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure." *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc).[1] If a claim term does not use the word "means," there is a rebuttable presumption that means-plus-function claiming under § 112(f) does not apply. *See Williamson*, 792 F.3d at 1349. The presumption is not strong. To rebut it, a challenger must demonstrate that a claim term either fails to "recite sufficiently definite structure" or recites "function without reciting sufficient structure for performing that function." *Id.* at 1349. A challenger does not have to show that the limitation is devoid of anything that can be construed as structure. Instead, it only has to show that the structure is not "sufficient." *Id.; see also Egenera, Inc. v. Cisco Sys., Inc.*, 972 F.3d 1367, 1374 (Fed. Cir. Aug. 28, 2020). The essential inquiry is "whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure." *MTD Prod. Inc. v. Iancu*, 933 F.3d 1336, 1341 (Fed. Cir. 2019) (quote omitted). "With respect to intrinsic evidence, a patent's specification may inform the skilled artisan's understanding of the structure required by a claim limitation." *Id.*

Courts use a two-step process to construe means-plus-function limitations. First, the court must determine the claimed function. *See Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352,

[1] An *en banc* Federal Circuit joined the portion of the *Williamson* decision discussing the applicability of Section 112. *See Williamson*, 892 F.3d at 1347-49 & n.3.

1361 (Fed. Cir. 2000). Second, the court must "identify the corresponding structure that the specification discloses to perform that function. *Id.* When the specification discloses "distinct and alternative structures for performing the claimed function," the proper construction should embrace each one. *Creo Prods., Inc. v. Presstek, Inc.*, 305 F.3d 1337, 1346 (Fed. Cir. 2002). The structure disclosed in the patent specification that corresponds to the claimed function limits the scope of a means-plus-function claim. *See Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1219 (Fed. Cir. 2003).

In the case of a computer-implemented means-plus-function claim, the disclosed structure must "be more than simply a general purpose computer or microprocessor." *Aristocrat Techs. Australia Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008). Instead, "in a means-plus-function claim 'in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.'" *Id.* (quoting *WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999)). If a patentee could claim just a general purpose computer as the structure, it would engage in "pure functional claiming." *Id.*

C. Indefiniteness

"Indefiniteness is a matter of claim construction, and the same principles that generally govern claim construction are applicable to determining whether allegedly indefinite claim language is subject to construction." *Kyowa Hakka Bio, Co., Ltd v. Ajinomoto Co.*, No. CV 17-313, 2020 WL 3403207, at *5 (D. Del. June 19, 2020) (internal quotations omitted). "The internal coherence and context assessment of the patent, and whether it conveys claim meaning with

reasonable certainty, are questions of law." *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1342 (Fed. Cir. 2015). A party seeking to prove indefiniteness must do so by clear and convincing evidence. *See BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1365 (Fed. Cir. 2017); *see also Cox Commc'ns, Inc. v. Sprint Commc'n Co. LP*, 838 F.3d 1224, 1228 (Fed. Cir. 2016).

"A patent's specification must 'conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as [the] invention.'" *Teva*, 789 F.3d at 1340 (quoting 35 U.S.C. § 112, ¶ 2.) A patent claim is indefinite if, "viewed in light of the specification and prosecution history, [it fails] to inform those skilled in the art about the scope of the invention with reasonable certainty." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129 (2014). "A claim may be indefinite if the patent does not convey with reasonable certainty how to measure a claimed feature." *Elm 3DS Innovations, LLC v. Samsung Elecs. Co.*, No. CV 14-1430-LPS-CJB, 2020 WL 1850657, at *3 (D. Del. Apr. 13, 2020) (citing *Teva*, 789 F.3d at 1341). However, if the understanding "how to measure the claimed [feature] was within the scope of knowledge possessed by one of ordinary skill in the art, there is no requirement for the specification to identify a particular measurement technique." *Ethicon Endo-Surgery, Inc. v. Covidien, Inc.*, 796 F.3d 1312, 1319 (Fed. Cir. 2015).

II. CONSTRUCTION OF DISPUTED TERMS

A. '3005 Patent—"a first guide plate pivotable at least substantially about said axis" (Claim 2)

MASA's Construction	Ricoh's Construction	Court's Construction
No construction necessary; plain and ordinary meaning	Claim term is indefinite	Claim term is indefinite

The Parties' dispute about this claim term focuses on the use of the word "substantially." The word "substantially" is not "inherently indefinite." *Elm 3DS Innovations, LLC v. Samsung Elecs. Co.,* No. CV 14-1430-LPS-CJB, 2020 WL 1850657, at *6 (D. Del. Apr. 13, 2020). "Substantially" can be used "when warranted by the nature of the invention, in order to accommodate the minor variations that may be appropriate to secure the invention." *Verve, LLC v. Crane Cams, Inc.,* 311 F.3d 1116, 1120 (Fed. Cir. 2002). However, when substantially is used as "a word of degree," the court has to "determine whether the patent provides some standard for measuring that degree." *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1332 (Fed. Cir. 2010) (quotation omitted). Otherwise, the patent fails to allow a person skilled in the art to compare potentially infringing products and determine "whether interference . . . is substantial." *Sonix Tech. Co. v. Publications Int'l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017) (quoting *Enzo*, 599 F. 3d at 1336).

The '3005 Patent uses the term "pivotable at least substantially about said axis" in Claim 2 but nowhere else. The specification explains that the guide plate, which guides the paper, is "pivotable about the rotating shaft that supports the skimmer." (ECF No. 22-22 at 10:24-32). It discloses a pivot around the axis, but it provides no information to determine what "substantially" means, either qualitatively or quantitatively. MASA points to an expert opinion from J. Michael McCarthy that contends that a person of ordinary skill in the art would understand the term. Dr.

McCarthy's view is that the term "substantially" does not refer to the degree that the first guide plate rotates around the axis. (ECF No. 130-1 at ¶ 32.) There is little doubt that the claim language envisions the guide plate rotating around the axis. Dr. McCarthy's reading strains the claim language beyond what it says. MASA cannot use extrinsic evidence to vary the words of the claim. Dr. McCarthy also claims that the "use of the phrase 'substantially about said axis' is a word description of the presence of variability . . . ." (*Id.* at ¶ 28.) That might be true, but it does not save the claim because there is still no way to determine how much variability the claim language allows.

Based upon the intrinsic evidence presented, the Court concludes that the term "substantially" is a word of degree that requires the Court to determine some standard for measuring that degree. But the patent does not disclose such a standard in the claim, the specification, or the file history. Nor does the extrinsic evidence. The claim term is therefore indefinite.

B. '314 Patent

1. "document ticket object" (Claims 1, 51)

MASA's Construction	Ricoh's Construction	Court's Construction
No construction necessary; plain and ordinary meaning "ticket for processing a document job"	"database entry containing more than one global document attribute"	No construction necessary; plain and ordinary meaning

This term does not require construction. A document ticket object is, as the term itself makes clear, a ticket to process a document job. There are several problems with Ricoh's proposed definition. First, it does not explain what the term means. Instead, it purports to define the term

by where it is stored—in a database. While the specification does reference a database, that appears to be a preferred embodiment, not a limit. The patent allows for the information to be stored in a software program that is not, technically, a "database." Second, Ricoh's proposed limit that the entry contain "more than one global attribute" would be redundant. Courts must construe claim terms in light of the surrounding claim language, "such that words in a claim are not rendered superfluous." *Digital-Vending Servs. Int'l, LLC v. Univ. of Phoenix, Inc.*, 672 F.3d 1270, 1275 (Fed. Cir. 2012) (citing *Phillips.*, 415 F.3d at 1314). Claim 1 of the '314 Patent states that a document ticket object "represent[s] global document attributes" in the same sentence as the disputed language. If the Court were to adopt Ricoh's proposed construction, then the claim term would read, "a database entry containing more than one global document attribute representing global document attributes." There is no need for that duplication. Third, Ricoh's proposed requirement that there be more than one global attribute does not come from anything in the specification. It stems only from the reference in the claim language to "attributes." That dispute goes to claim language other than the language that the Parties have presented for construction. The Court will not construe the term "document ticket object" in a way that alters the meaning of the word "attributes," and the meaning of that word is left for another day.

2. "a first user input device for selectively associating at least two of said first, second and third visual representations" (Claim 1)

MASA's Construction	Ricoh's Construction	Court's Construction
No construction necessary; plain and ordinary meaning. "An interface for receiving an input"	"a mouse, keyboard, or other hardware device for selectively associating at least two of said first, second, and third visual representations"	"a hardware device for selectively associating at least two of said first, second, and third visual representations"

The Parties' dispute is whether a "user input device" requires hardware. The Court concludes that it does. There is no other way to understand the word "device." Users cannot interact with software without some piece of hardware to enable that interaction. MASA presses the point that the specification envisions a graphical user interface ("GUI"). The Court agrees. But the GUI cannot function without a monitor or similar hardware device to display it to, and receive input from, the user. The Court does not adopt Ricoh's proposal to call out certain types of hardware, however. The mouse and keyboard that Ricoh references fall within the "other hardware device" catchall in its proposal. At the *Markman* hearing, its counsel conceded that Ricoh was "not trying to rule out any hardware." (Tr. at 25.[2]) If the term allows for all types of hardware, then there is no reason to call out certain types of hardware as preferred. *See Intex Recreation Corp. v. Team Worldwide Corp.*, 42 F. Supp. 3d 80, 96 (D.D.C. 2013) ("claims generally should not be confined to the disclosed embodiments, where no other intrinsic evidence supports the limitation."); *Phillips*, 415 F.3d at 1323 ("although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.").

3. "wherein association of said first, second and third visual representations results in association of said respective objects" (Claim 1)

MASA's Construction	Ricoh's Construction	Court's Construction
No construction necessary; plain and ordinary meaning	Claim term is indefinite	No construction necessary; plain and ordinary meaning

Ricoh contends that this claim term is indefinite because it covers both an apparatus and a method of using that apparatus. If that were the case, it would be "unclear whether infringement

[2] Citations to "Tr." refer to the Transcript of the *Markman* hearing, held on June 12, 2020.

occurs when one creates an infringing system, or whether infringement occurs when the user actually uses the system in an infringing manner." *UltimatePointer, L.L.C. v. Nintendo Co.*, 816 F.3d 816, 826 (Fed. Cir. 2016) (internal quotation omitted) (quoting *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005)). To avoid this problem, an inventor must limit an apparatus claim to "an apparatus possessing the recited structure and ***capable*** of performing the recited functions." *Id.* (emphasis in original).

The claim language at issue does not require active steps. Instead, it describes the structure of an interface apparatus that is comprised of, among other things, a first user input device for selectively associating certain visual representations. The "wherein association" term at issue here is not an active method step. It modifies the prior clause and describes the functionality of the interface. *See id.* at 827–28 ("[T]he claims do not recite functionality divorced from the cited structure. Therefore, the claims do not reflect an attempt to claim both an apparatus and a method, but instead claim an apparatus with particular capabilities.")

4. Means-Plus-Function Limitations (Claim 62)

Term	MASA's Construction	Ricoh's Construction	Court's Construction
"means for receiving content and formatting instructions for formatting said content, said formatting instructions comprising instruction means for sub-dividing said content into one or more pages"	Function: "receiving content and formatting instructions for formatting content, the formatting instructions include instruction for sub-dividing content into one or more pages" Structure: "a computer network, CPU or processor having a user interface"	Function: "receiving content and formatting instructions for formatting the content" Structure: Inadequate structure disclosed; claim term is indefinite.	Function: "receiving content and instructions for the content, including instructions for sub-dividing the content into one-or-more pages" Structure: "workflow software with a user interface"

"means for receiving output instructions for controlling output of said content to an output device"	Function: "receiving output instructions for controlling output of the content to an output device" Structure: "a computer network, CPU or processor having a user interface"	Function: "receiving output instructions for controlling output of the content to an output device" Structure: Inadequate structure disclosed; claim term is indefinite.	Function: "receiving output instructions for controlling output of the content to an output device" Structure: "workflow software with a user interface"
"means for representing said content and formatting instructions on a display as a first manipulatable object"	Function: "representing the content and formatting instructions on a display as a first manipulatable object" Structure: "a computer network, CPU or processor with a monitor or display showing a graphical rendering of an object"	Function: "representing the content and formatting instructions on a display as a first manipulatable object" Structure: Inadequate structure disclosed; claim term is indefinite.	Function: "representing the content and formatting instructions on a display as a first manipulatable object" Structure: "workflow software with a user interface"
"means for representing said output instructions on said display as a second manipulatable object"	Function: "representing output instructions on a display as a second manipulatable object" Structure: "a computer network, CPU or processor with a monitor or display showing a graphical rendering of an object"	Function: "representing the output instructions on the display as a second manipulatable object" Structure: Inadequate structure disclosed; claim term is indefinite.	Function: "representing the output instructions on the display as a second manipulatable object" Structure: "workflow software with a user interface"

"means for selectively associating said first manipulatable object with said second manipulatable object to associate said output instructions with said content and formatting instructions"	Function: "selectively associating the first manipulatable object with the second manipulatable object to associate the output instructions with the content and formatting instructions" Structure: "a computer network, CPU or processor having a user interface and programming language"	Function: "selectively associating the first manipulatable object with the second manipulatable object to associate the output instructions with the content and formatting instructions" Structure: Inadequate structure disclosed; claim term is indefinite.	Function: "selectively associating the first manipulatable object with the second manipulatable object to associate the output instructions with the content and formatting instructions" Structure: "workflow software with a user interface"
"means for representing said association on said display as a third manipulatable object"	Function: "representing the association on the display as a third manipulatable object" Structure: "a computer network, CPU or processor with a monitor or display having a user interface and programming language"	Function: "representing the association on the display as a third manipulatable object" Structure: Inadequate structure disclosed; claim term is indefinite.	Function: "representing the association on the display as a third manipulatable object" Structure: "workflow software with a user interface"

The Parties agree these terms are means-plus-function terms, but they disagree as to whether the patent discloses a sufficient structure for these claims. Although the patent is not a model of clarity, it does include information in the specification that sheds light on the specification. It includes flowcharts that describe the steps that the computer will perform. (ECF No. 1-3 at Figs., 1a, 1b, 2, 4a, 5.) It also describes "workflow management software" and describes in prose how that software works. (*Id.* at 6:3-6, 8:61-65, 9:31-40, 9:58-60, 9:64-66, 10:12-14.)

Though not the strongest evidence of structure, it is a structure from which a person skilled in the art could determine the scope of the invention.

Although the patent discloses a structure, the Court will not adopt MASA's proposal that the structure be a general purpose computer. That is too broad. In effect, MASA would be claiming just a functionality if the Court permitted that structure. Instead, the Court adopts a structure that the specification describes and discloses.

Ricoh's argument that there is no structure is just that—argument. Ricoh offers no evidence of any kind regarding knowledge of persons skilled in the art who might know and understand what structure corresponds to the means limitation. *See Elcommerce.com v. SAP AG*, 745 F.3d 490, 505 (Fed. Cir. 2014); *see also Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008). That omission dooms Ricoh's argument because it is Ricoh's burden to prove indefiniteness by clear and convincing evidence. *See TecSec, Inc. v. Int'l Bus. Machs. Corp.*, 731 F.3d 1336, 1349 (Fed. Cir. 2013).

C. '974 Patent

1. "exception page" (Claims 1, 2)

MASA's Construction	Ricoh's Construction	Court's Construction
"portion of a document that is separate from the main body of a document to be printed"	"page designated to be printed at a different output device than the main portion"	"page of a document that is separate from the main portion of a document to be printed"

MASA's proposed construction is consistent with the specification, which distinguishes between the "main body of the document" and the "exceptions to be produced separately." (ECF No. 1-5 at 18:26-28; *see also id.* at 18:65-19:9.) However, MASA proposes to substitute the word

"portion" for the word "page" that is in the claims. The Court will not do so. The word "page" is clear; it does not require construction. To the extent that MASA's use of the word "portion" is intended to allow for more than one page, the claim language already permits this because it describes "at least one exception page," meaning there could be more than one. (*Id.* at 22:26-29, 23:1-24:4.) Ricoh's proposed construction would define an exception page as a page printed at a different output device. But the claims already require the exception page to be "printed at an alternate output device." (*Id.*) There is no reason to construe the phrase "exception page" to include a limit that the claim already contains.

2. "Input device" (Claim 2)

MASA's Construction	Ricoh's Construction	Court's Construction
"a user interface for receiving inputs"	"a keyboard, mouse, or other hardware device that sends data to the computer"	"a hardware device that sends data to the computer"

The Court adopts this construction for the same reasons that it construed the "user input device" term in the '314 Patent.

3. "the plurality of documents are merged to create the single document, where the plurality of documents comprise a main portion and at least one exception page, where the printing of the main portion is delayed at a production device associated with the single document, while the at least one exception page is printed at an alternate output device where the production device prints the main portion and where the production device collates the at least one exception page with the main portion" (Claim 2)

MASA's Construction	Ricoh's Construction	Court's Construction
No construction necessary; plain and ordinary meaning	Claim term is indefinite	No construction necessary; plain and ordinary meaning

Claim 2 claims a system for providing production printing instructions for an end document to a job preparation station. It discloses a plurality of documents and a computer that is programmed to turn that plurality of documents into an end product. The "wherein" clause at the end, which contains the language at issue, describes how the computer is programmed to generate that end document: it delays printing the main portion to allow printing of an exception page at a different device and then collates the pages into an end product. That is, the "wherein" clause does not describe steps that the user takes. It describes steps that the computer is programmed to take.

It is true, as Ricoh points out, that this claim term uses forms of active verbs, such as "print" and "collate." Even a claim that includes active verbs can "represent permissible functional language used to describe capabilities" of the apparatus. *MasterMine Software, Inc. v. Microsoft Corp.*, 874 F.3d 1307, 1315–16 (Fed. Cir. 2017). In *MasterMine*, the court distinguished between verbs that describe the system's capabilities and verbs that describe the user's activities. *See id.* at 1316. Because the language at issue here describes the system's capabilities, it is not indefinite.

D. '269 Patent—"first position" and "second position" (Claim 1)

MASA's Construction	Ricoh's Construction	Court's Construction
No construction necessary; plain and ordinary meaning	Claim terms are indefinite	Claim terms are indefinite

Nothing in the claim, specification, or file history provides any way for the Court or a member of the public to discern what the first position and second position are. There are no qualitative or quantitative benchmarks for a person skilled in the art to know whether a machine that places sheets of paper in a particular position practiced this invention. The applicants

apparently added the terms to the claim at the behest of the examiner, based on calls between the examiner and prosecution counsel. But there is nothing in the public record that sheds light on the terms' meaning. The terms are indefinite.

None of MASA's arguments changes this analysis. MASA argued at the *Markman* hearing (but not in the briefs) that because the claim is an improvement claim, the terms in the preamble are "not even a limitation." (Tr. at 60.) But that has it backwards. When a claim claims an improvement over prior art and falls within 37 C.F.R. § 1.75(e), the preamble language is limiting. *See Arctic Cat Inc. v. GEP Power Prods., Inc.*, 919 F.3d 1320, 1330 (Fed. Cir. 2019) ("[w]e have long held that preamble language is limiting when the claim recites a combination in the way specified in" Section 1.75(e)). In addition, the body of the claim uses the phrase "second position," which refers back to the preamble. For that additional reason, the preamble recites an essential structure that animates the body of the claim. *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (quote omitted). And, the term "second position" implies there must also be a first position, so the body of the claim refers to and derives meaning from both of these terms in the preamble.

MASA also points to Dr. McCarthy's opinion that a person skilled in the art would understand these terms. Dr. McCarthy points to extrinsic evidence that establishes the prior art over which this claim claims an improvement. (ECF No. 130-1 at ¶ 35.) But Dr. McCarthy's description of the improvement is circular. He explains that a person of skill in the art would understand that the improvement "includes moving sheets of paper between different positions." (*Id.* at ¶ 37.) Of course, the use of the terms "first position" and "second position" says as much. But Dr. McCarthy does not say what those positions are, or even how to evaluate whether a

particular position is a first position, a second position, or neither. Similarly, Dr. McCarthy's discussion of the '133 patent that this patent incorporates describes certain positions as "e.g. a first/second position." (*Id.* at ¶ 42.) This circular reasoning does not provide any guidance about what position is a first or second position.

Finally, MASA argues that the second position is "where suction is used" (ECF No. 123 at 24.) But the term "suction" does not appear anywhere in the patent. MASA's attorney argument, untethered to the claim or the specification, does not save this claim.

E. '285 Patent

1. "operator replaceable component (ORC) devices" (Claims 1, 14)

MASA's Construction	Ricoh's Construction	Court's Construction
No construction necessary; plain and ordinary meaning.	"A device within the printer that (a) is designed for replacement by a typical operator of the printer, (b) wears with use, and (c) has a predictable lifetime. Usage of the component is tracked and remaining life is periodically calculated to determine when the component should be replaced. A component where a sensor is used to detect when the component must be replenished or replaced is not an ORC."	"devices within the printer that a typical operator of the printer can replace and that wear with use"

As a threshold matter, the Court rejects MASA's suggestion that this term has its plain and ordinary meaning. During the *Markman* hearing, MASA argued that the term means a "component [that] is replaceable or changed by an operator." (Tr. at 71.) The specification explains, for example, that components that use a senor to detect the need for replacement, as opposed to a measurement of expected life span, are not ORC devices. (ECF No. 1-7 at 5:2-13.) Thus, not every

component that an operator can replace or change is an ORC. The term therefore requires construction to avoid confusion.

The Court's construction of this term honors the claim language and specification. The specification explains that an ORC enables a "typical operator" to perform the majority of maintenance of a system without the services of a field engineer. (*Id.* at 2:50-52.) It also described ORCs as devices that "become worn after periods of use." (*Id.* at 2:63-65.) This limit is important because it sets ORCs apart from components that get consumed (like toner and paper), rather than worn.

The Court does not adopt the other limits that Ricoh proposes. First, Ricoh suggests that an ORC must have a "predictable lifetime." The claim already requires an ORC to have an "expected life span." (*Id.* at 14:16-18.) The Court will not render that term superfluous by adding it to the construction of "ORC." Ricoh argues that "predictable lifetime" and "expected lifetime" have different meanings. The patent is not a model of clarity on this point. The patent frequently contrasts an "expected life span" from a "remaining life span" of a device. (*Id.* at Abstract, 2:24-25.) These references imply that an expected life span is the time a component should last when it is new, and the remaining life span is what is left after some use. Other times, the patent refers to an "expected life span" in a way that suggests it is the remaining life span. (*E.g.*, *id.* at 2:39-43.) Indeed, the specification explains that it lists certain components' "expected life span" in a column of a chart titled "Remaining Life." (*Id.* at 5:13-19.) The patent is similarly inconsistent in its use of the term "predictable lifetime." Sometimes, it refers to a "predictable lifetime" as a component's out-of-the-box lifetime. (*E.g.*, *id.* at 2:1-2, 6:39-52.) Other times, it refers to "predictable lifetime" as the remaining lifetime. (*E.g.*, *id.* at 3:1-4.)

Given this inconsistency, the Court cannot conclude that the applicants distinguished either term from the other. Instead, the applicants seem to have used both terms in the same, inconsistent way. The Court therefore concludes that the requirement in the claim that an ORC have an "expected life span" is the same as requiring it to have a "predictable lifetime." In addition, even if they had the different meaning that Ricoh suggests, there would be no reason to impose that limit in the construction of this term. If "expected" and "predictable" lifetimes are different, then the expected or remaining lifetime is calculated against the predictable (i.e., out-of-the-box) lifetime. So, the claim's inclusion of "expected lifespan" language imports a "predictable lifespan" limit by implication.

Second, Ricoh's proposed requirement that "[u]sage of the component is tracked and remaining life is periodically calculated to determine when the component should be replaced" is redundant of other language in the claim. (*E.g.*, *id.* at 14:18-30.) Given the surrounding claim language, adding this proposed sentence to the construction of the term ORC Device would render the words in the claim superfluous. Third, and finally, Ricoh's proposed negative limitation is not necessary because the claim already requires a "comparison mechanism." That claim limit precludes the use of a sensor. Ricoh's negative limit is therefore redundant.

2. "determining a remaining life span for the operator replaceable component device having the shortest expected life span" (Claim 14)

MASA's Construction	Ricoh's Construction	Court's Construction
No construction necessary; plain and ordinary meaning.	"identifying which one ORC device from all of the ORC devices has the shortest remaining life and the numerical value of that remaining life"	"determining a remaining life span for the operator replaceable component device having the shortest remaining life"

The Parties' dispute about this term arises from the patent's sloppy use of the term "expected life span." That inconsistency leaves open the possibility that the claim term could mean different things, which means that the Court has to construe it. The Court construes it to mean "remaining life" in this instance. The Court also construes the claim to require a survey of ORCs to determine which one has the shortest remaining life.

Both the claim language and specification support the Court's construction. The preamble to the claim describes a "method for providing operator maintenance on a system having a **plurality** of operator replaceable component devices . . .." (*Id.* at 14:65-67 (emphasis added).) The reference to a "plurality" of ORCs demonstrates that the claim term applies to many ORCs, not just the one with the shortest average life span when it comes out of the box. In addition, the specification explains that the system will "look[] at ORC object files and sort[] through them to determine which should be expected to expired first." (*Id.* at 10:26-30.) During the *Markman* hearing, the Court pointed out that the only reason this claim applies to a system with a plurality of ORCs is because it is intended to survey the ORCs and then provide information about the one with the shortest expected life. It therefore anticipates dynamic information about the ORCs as their expected life spans change.

MASA argues that "expected life span" refers to a static, out-of-the-box number. But the specification makes clear that the system will track several different ORCs. (*Id.* at 3:38-42.) And, as the Court pointed out during the hearing, if MASA's interpretation were correct, then the claim would always apply to the same ORC. That would render superfluous the preamble's disclosure of a "plurality" of ORCs.

Although the Court adopts those limits, it does not adopt Ricoh's requirement that there be a numerical value of remaining life. The claim language allows a disclosure of a date of expiration or a passage of time. The Court does not understand those to be numerical limits, but those embodiments could fall within the scope of this claim.

3. "a use mechanism coupled to each said computational element and said ORC devices, said use mechanism tracking use of at least one of said ORC devices using a predetermined parameter" (Claim 1)

MASA's Construction	Ricoh's Construction	Court's Construction
No construction necessary; plain and ordinary meaning.	Governed by 35 U.S.C. § 112(6): Function: "tracking use of at least one of said ORC devices using a predetermined parameter" Structure: "A controller, with a database management system, coupled to each computational element and ORC device and that is programmed to (1) receive data for each ORC device detailing the ORC device's usage and (2) maintain an object file for each ORC device indicating the remaining life of the ORC device in terms of page count."	Governed by 35 U.S.C. § 112, ¶ 6: Function: "tracking use of at least one of said ORC devices using a predetermined parameter" Structure: "A controller, with a database management system, coupled to each computational element and ORC device and that is programmed to (1) receive data for each ORC device detailing the ORC device's usage and (2) maintain an object file for each ORC device indicating the remaining life of the ORC device based on customer usage."

The Court concludes that the term "use mechanism" does not disclose a structure. On its own, a "mechanism" is not a structure. *See Williamson*, 792 F.3d at 1350. The intrinsic evidence provides no basis to determine what a "use mechanism" is. The specification does not use the term, and the file history is no help. MASA argues that the claim discloses how the use mechanism interacts with the ORC, but that is wrong. The claim describes a coupling between the ORC and the use mechanism, but provides no detail about the actual interaction. MASA also points to Dr.

McCarthy's opinion. In his Declaration, Dr. McCarthy claims that a "use mechanism . . . is a well-known requirement in mechanical systems" because "[c]ounting mechanisms have a long history." (ECF No. 130-1 at ¶ 48.) But Dr. McCarthy never establishes that a "use mechanism" and a "counting mechanism" are the same thing. So, while a "counting mechanism" might be known to a person skilled the art, nothing in the record establishes that a "use mechanism" is.

Because the term "use mechanism" does not disclose a structure, the Court concludes that Ricoh has overcome the weak presumption against a means-plus-function claim. The claim is subject to Section 112, ¶ 6. It discloses a function: tracking use of at least one of the ORC devices using a pre-determined parameter. It discloses a structure in the form of a controller with a database management system that tracks customer use through various inputs, including "the number of prints made, the types of paper being used, the color composition of the printed pages as well as various sensor inputs." (ECF No. 1-7 at 3:29-33.) Because the structure is a general purpose computer, the patent must also disclose an algorithm that the computer can perform. Ricoh contends that the only algorithm that the specification discloses is a calculation of a remaining page count. The Court disagrees. The specification discloses a comparison of a predicted life, the amount of use to date, and the remaining life. (*Id.* at 9:20-28.) While this is not a precise mathematical formula, it does disclose the computation that the invention performs. The Court therefore declines to require that the structure counts pages. The Court will, however, require that the structure count "customer usage," because that is what the specification envisions. (*Id.* at 2:10-13.)

4. "a comparison mechanism that compares use of said ORC devices to said expected life span … where said expected life span for a single of said ORC devices is the shortest expected life span" (Claim 1)

MASA's Construction	Ricoh's Construction	Court's Construction
No construction necessary; plain and ordinary meaning.	Governed by 35 U.S.C. § 112(6): Function: "comparing use of the ORC devices to their remaining life spans using the single ORC device with the shortest expected life span" Structure: "A controller that is programmed to (1) examine the object files for all ORC devices, (2) determine from the object files the ORC device that has the shortest remaining life, (3) reduce the remaining life value for the identified ORC device by the number of pages printed since the last time the remaining life value was calculated, and (4) determine whether the life of the identified H20ORC device has expired."	No construction necessary; plain and ordinary meaning.

The specification does not use the term "comparison mechanism," and neither the specification nor the file history provides any guidance about the term's meaning. However, unlike with the use mechanism, extrinsic evidence demonstrates that a "comparison mechanism" is a known class of structures that compares a measured value to a preset limit. Dr. McCarthy's Declaration provides examples of those types of devices and of publications that reference and describe them. The Court credits that evidence and therefore holds that this claim term is not subject to Section 112, ¶ 6. Of note, the Court credits Dr. McCarthy's Declaration on this point, and not Dr. Clark's, because Dr. McCarthy's Declaration is specific and points to external sources as a basis for his opinion. Dr. Clark's Declaration, on the other hand, just invokes his "education and experience in the field of printing systems" as a basis for his opinion about this term. (ECF No.

122-4 at ¶ 66.) Expert testimony cannot rely just on an expert's *ipse dixit*. That is, an expert cannot offer an opinion on claim construction based solely on his experience, "[u]ntethered to any supporting evidence[.]" *TQ Delta, LLC v. CISCO Sys., Inc.*, 942 F.3d 1352, 1362 (Fed. Cir. 2019); *see also Phillips*, 415 F.3d at 1318 (expert's "conclusory, unsupported assertions . . . as to the definition of a claim term are not useful to a court"). Dr. Clark's opinion runs afoul of this rule, and the Court therefore rejects it.

F. '582 Patent—"inverse mask" (Claim 1)

MASA's Construction	Ricoh's Construction	Court's Construction
No construction necessary; plain and ordinary meaning.	"A pattern of application of clear toner onto a color image where balance is created in toner stack heights by providing relatively greater amounts of clear toner coverage to areas of an image having relatively lower amounts of color toner coverage and lesser amounts of clear toner coverage to areas of the image having relatively greater amounts of color toner coverage."	"Coat of clear toner to create a balanced image where the amount of clear toner applied depends on the receiver and the image on which it is applied"

This term requires construction. Nothing the record suggests that it is a commonly-used term, either for a layperson or a person skilled in the art. Nor does the claim language imply its meaning. The Court therefore cannot rely on its plain meaning, as MASA suggests.

Ricoh's proposed construction comes from the specification. (ECF No. 122-25 at 7:24-36.) However, MASA points out that this construction could limit certain embodiments that are disclosed in related patents. The Court's construction also comes from the specification but avoids Ricoh's potential limits. *See Phillips*, 415 F.3d at 1323 ("[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the

claims to those embodiments."). Like the specification, the Court's construction defines the inverse mask in terms of the creation of balance to an image through the application of clear toner on top of an image. However, unlike Ricoh's construction, the Court's construction permits the amount of clear toner to vary based on the image, so if a user wants to achieve a higher-gloss image, it can instruct the printer to do so. The Court's definition is consistent with one it proposed at the *Markman* hearing. (Tr. at 101.) Although the Parties have not agreed to that construction, neither has articulated a principled objection to it.

G. '255 Patent—"an alignment device to align the two or more printing engines in the cross track direction (z direction) relative to the receiver path cross track reference based on the measurement" (Claim 1)

MASA's Construction	Ricoh's Construction	Court's Construction
A device or component, such as a controller, to align two or more printing engines in a side to side direction perpendicular to the receiver path based upon the measurement of the measurement device.	Governed by 35 U.S.C. § 112(6): Function: "aligning the two or more printing engines in the cross track direction (z direction) relative to the receiver path cross track reference based on the measurement" Structure: "Alignment pins, alignment holes, and vertical spacers"	Governed by 35 U.S.C. § 112, ¶ 6: Function: "aligning the two or more printing engines in the cross track direction (z direction) relative to the receiver path cross track reference based on the measurement" Structure: "Alignment pins and holes to horizontally align the components and additional spacers to allow the modules to be aligned vertically"

Although the claim language does not use the word "means," it defines the alignment device in terms of its function. Even MASA's proposed construction would define the device based on its function: to "align the two or more printing engines . . .." Neither the intrinsic nor extrinsic

evidence discloses a structure for an alignment device. The specification uses the term twice. Once, it uses the same language as this claim term. The other, it explains that alignment devices "include alignment pins . . . and alignment holes . . .." (ECF No. 1-15 at 13:7-13.) That specification language explains some of the components of an alignment device, but it does not define its structure. MASA also relies on Dr. McCarthy's opinion that an "alignment device" is known in the art. Dr. McCarthy's Declaration does not point to any source or information on which he grounds his opinion. It is just his *ipse dixit*. In fact, for this term, Dr. McCarthy focuses most of his energy on his legal analysis of MASA's proposed construction, opining that it is "easy to understand and consistent with the patent claim language and specification." (ECF No. 130-1 at ¶ 71.) Those are determinations for the Court to make, not Dr. McCarthy. The Court concludes that the claim term is a means-plus-function term that is subject to Section 112, ¶ 6.

The claim language defines the function. The specification defines the structure: "Alignment pins and holes are then located to correctly horizontally align the components and additional spacers are installed to allow the modules to be aligned vertically." (ECF No. 1-15 at 11:13-16.) The specification uses similar language in other places to define the alignment device as well. (*E.g.*, *id.* at 5:445-51, 10:35-42, 10:50-51.) MASA contends that the specification contemplates other embodiments, including ones that permit electronic devices to perform the alignment. The specification does not support MASA's position. Although the specification discloses the use of electronic devices to make measurements that will be used in the alignment, nothing in the specification discloses an embodiment where an electronic device performs the alignment itself. Also, a means-plus-function claim requires a defined structure, and MASA's

attempt to include electronic devices would render the claim indefinite because there would be no such structure.

III. CONCLUSION

The Court will adopt these claim terms, as well as the Parties' agreed-upon terms. An appropriate Order follows.

BY THE COURT:

/s/ Joshua D. Wolson
HON. JOSHUA D. WOLSON
United States District Judge

October 21, 2020